

Serial No. 09/923,477

PATENT
Docket No. 58027-010400REMARKS

Responsive to the Final Office Action of January 9, 2004, reconsideration of the above application is respectfully requested.

The Applicants' thank the Examiner for granting an interview April 8, 2004. During the interview one of the Applicants', Dr. Chih Ming Ho, was present along with the undersigned attorney Charles Berman, and Dr. Sunil Bharitkar.

In the interview the following points were addressed with the Examiner.

1. The present invention is related to homogenous mixing of at least 2 fluids in a channel or a reactor, at a nano-scale molecular level, where the rate of mixing is greater than that of diffusion.

2. The present invention allows a mixing time, between two fluids, that is substantially smaller than that achieved by diffusion.

3. In the present system, homogenous mixing at a rate greater than diffusion is achieved due to the chaotic regime reached by the two fluids during the mixing operation (paragraph [0044] and FIG. 9). Chaos is well defined in the art, and a copy of a textbook definition (J. M. Ottino, *The kinematics of mixing: stretching, chaos, and transport*. Cambridge Univ. Press. Cambridge. 1989) of "chaotic motion" between fluids is provided to the Examiner for instant reference. This reference should not be construed as a limitation of the claims, and is exemplary only.

4. Any of the three forces, electrokinetic, hydrodynamic, and magnetic, may be used in the present system to achieve homogenous mixing at a rate greater than that of diffusion.

5. The prior art patents cited by the Examiner did not show homogenous mixing at a rate greater than that of diffusion.

6. The prior art patents, cited by the Examiner, disclosed a linear and laminar motion of the fluids, due to a transverse force, which had little to no effect at the interface of the fluids to enable homogenous mixing at a rate greater than that of diffusion.

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7. Turbulence is necessary to enable homogenous mixing at a rate greater than that of diffusion. As there is no turbulence in laminar and linear flow of fluids, in the Examiner cited prior art patents, there is no homogenous mixing at a rate greater than that of diffusion in the prior art.

Based on the above points of the discussion, and the response filed to the prior Office Action, the Examiner agreed that present system can be distinguished from the Examiner cited prior art by a slight amendment to the claims. The invention permits for the mixing for the effective mixing of at least two components in a manner that has before been possible.

Accordingly, based on the Examiner's suggestion, independent claims 1, and 22-25 have been amended to include the aspect of chaotic motion achieved by the two fluids during homogenous mixing at a rate greater than diffusion. As discussed and agreed, by the Examiner, amending the claims with this new limitation does not add any new issues to warrant a new search.

Accordingly, it is requested that the rejections applied to all claims be traversed.

An Information Disclosure Statement is being filed with the present response. It is clear that the document cited in the IDS cannot be construed as a prior art.

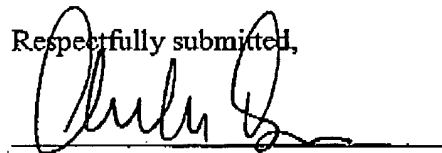
Thus, in view of the above, it is submitted that this application is now in good order for allowance, and such early action is respectfully solicited. Should matters remain which the Examiner believes could be resolved in a telephone interview, the Examiner is requested to telephone the Applicants' undersigned attorney.

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Respectfully submitted,



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